



# PERCEIVED STRESS AND TRAIT MINDFULNESS LEVELS AMONG HEALTHCARE EDUCATION FACULTY

Andrea M. Constandis<sup>1</sup>, Chris Cale<sup>2</sup>, \*Sunddip Panesar-Aguilar<sup>3</sup>, Doreen Stiskal<sup>4</sup>

<sup>1</sup> EdD, Concorde Career Institute, Jacksonville, USA

<sup>2,3</sup> EdD, PhD, Riley College of Education, Walden University, Minneapolis, USA

<sup>3</sup> EdD, College of Health Sciences, University of St. Augustine, St. Augustine, USA (Corresponding Author)

<sup>4</sup> PhD, American Physical Therapy Association, Alexandria, USA

## ABSTRACT

Increasing stress levels among faculty in healthcare professions is a rising problem that can lead to poor health and well-being. Heightened academic demands and the COVID-19 pandemic have contributed to higher stress levels. Coping strategies like mindfulness are beneficial to counteract stress, yet few studies have investigated the relationship between perceived stress and trait mindfulness levels among physical therapy faculty. The purpose of this quantitative, non-experimental study was to determine the statistical relationship between perceived stress and trait mindfulness levels among all full-time physical therapy faculty. A secondary purpose of this study was to determine the statistical relationship between perceived stress and trait mindfulness levels among full-time Doctor of Physical Therapy faculty and full-time physical therapist assistant faculty. The theoretical framework of this study was the transactional theory of stress and coping. Purposive sampling included 123 full-time physical therapy faculty participants recruited from the American Physical Therapy Association Academy of Education listserv. Pearson's correlational coefficient and independent samples t-test were the statistical tests used to analyze data. Results indicated a statistically significant negative correlation between perceived stress and trait mindfulness among all full-time physical therapy faculty and no significant difference in the variables of full-time Doctor of Physical Therapy faculty compared to full-time physical therapy assistant faculty. The findings suggest that emotion-focused coping strategies, such as mindfulness, may be helpful to incorporate into professional training and development to reduce physical therapy faculty stress levels, thereby optimizing health and well-being.

**KEYWORDS:** Healthcare Education, Stress And Faculty, Mindfulness, Physical Therapy Education, Physical Therapy Faculty.

## INTRODUCTION

Teaching is a stressful profession<sup>1</sup>. Stress is the experience of unpleasant, negative emotions such as anger, anxiety, frustration, and burnout. Stress affects faculty worldwide<sup>2</sup>. Around 20–26% of educators worldwide have high stress levels comparable to those reported by doctors and nurses<sup>3</sup>. Faculty stress has risen over the last few decades because of mounting university expectations<sup>1</sup>. Sources of increased faculty stress include heightened workloads, larger class sizes, diminished autonomy, limited financial resources, time demands, disruptive student behaviors, and threats of physical violence<sup>3</sup>. Additionally, faculty feel stressed due to a lack of reward and recognition, departmental influence, professional identity, and student interactions<sup>1</sup>. Administrators expect higher education faculty to maintain their achievements in teaching, research productivity, and service while navigating a changing academic landscape<sup>4</sup>. This shift in academic culture has increased competition, workloads, and administrative responsibilities<sup>1,4</sup>. Higher education faculty are also pressured to obtain tenure, embrace technological advancements, and solve problems with limited resources<sup>4</sup>. Such growing job requirements and expectations contribute to faculty stress levels.

The COVID-19 pandemic exposed higher education faculty to new high-stress levels, highlighting the importance of addressing their health and well-being<sup>1</sup>. The quick, unprecedented closures of academic institutions worldwide effectively halted traditional face-to-face (F2F) classroom learning<sup>5,6</sup>. By the spring of 2020, over 4,000 institutions and 26 million students in the United States were affected by university closures<sup>5</sup>. Due to the extensive closures of academic institutions,

all courses had to be reformatted into a fully online, virtual environment, dubbed “emergency remote teaching” (Majsak et al., 2022). The conversion of F2F courses to an online format and the rapid adoption of unfamiliar educational technology significantly increased faculty stress levels<sup>1,6</sup>. Many faculty were unprepared to teach in an online environment. Faculty had little preparation, guidance, or technological support when implementing emergency remote teaching. The lack of assistance caused faculty confusion, frustration, and stress<sup>6</sup>. The abrupt and dramatic shift to emergency remote teaching significantly negatively impacted faculty in healthcare professions such as medicine, nursing, pharmacy, dentistry, occupational therapy, and physical therapy (PT).

Faculty in healthcare professions scrambled to redesign traditional F2F didactic lecture courses, hands-on laboratory courses, and clinical education experiences<sup>8</sup>. Lecture courses are typically delivered F2F but can also be delivered online, synchronously or asynchronously. Laboratory courses, on the other hand, are almost entirely delivered F2F<sup>8</sup>. The hands-on, practical application of laboratory courses is foundational for students in healthcare professions to practice and master the psychomotor skills necessary for entry-level clinical practice. Hands-on laboratory courses reinforce cognitive learning and improve critical thinking skills<sup>8</sup>. Faculty in healthcare professions struggled to find adequate online solutions for laboratory courses that met the standards and quality of in-person learning<sup>9</sup>. Another challenge faculty faced because of the COVID-19 pandemic was the revision and rescheduling of integrated clinical education experiences as clinical education sites stopped accepting students or reduced acceptances<sup>5</sup>. Course

restructuring and rescheduling imposed new demands on faculty in healthcare professions, contributing to increased psychological stress<sup>10</sup>.

Physical therapy (PT) education is an example of a healthcare profession that pivoted from the traditional F2F model to an online learning model. Like other healthcare programs, PT programs incorporate F2F didactic lectures, laboratory courses, and clinical education experiences. PT education includes Doctor of Physical Therapy (DPT) degree programs and physical therapist assistant (PTA) associate degree programs. According to accreditation guidelines, all faculty in PT education programs (PT faculty) must prepare DPT and PTA students for the modern workplace through a comprehensive curriculum plan that includes specific lecture and laboratory course components as well as clinical education experiences<sup>11,12</sup>. By the end of the terminal clinical education experience, all DPT and PTA students must achieve entry-level performance<sup>11,12</sup>. Before the COVID-19 pandemic, all PT faculty were pressured to uphold accreditation regulations; emergency remote teaching during the COVID-19 pandemic compounded these pressures<sup>13</sup>.

Acute faculty stress can motivate, but chronic stress can cause various physical and psychological issues<sup>3</sup>. Prolonged stress and its associated neglect of well-being can result in decreased teaching efficiency and a lack of motivation, negatively impacting student learning and outcomes<sup>14</sup>. Faculty must manage work-related stressors to protect their health and well-being, optimize teaching capabilities, and continue effectively serving learning institutions and students<sup>1</sup>. Yet, faculty frequently lack the training to manage stress<sup>3</sup>.

Coping is the key to effective stress management. Coping mechanisms, or stress-reduction strategies, can be negative (maladaptive) or positive (adaptive)<sup>14</sup>. Consuming alcohol, smoking, abusing substances, and eating an unhealthy diet are examples of negative coping strategies<sup>15</sup>. Negative coping strategies threaten the health and well-being of individuals. Conversely, positive coping strategies, such as exercise, relaxation, prayer, time management, social support, meditation, and mindfulness, effectively reduce stress while protecting individuals' health and well-being<sup>15</sup>.

Mindfulness, defined as being present in the moment, has been extensively researched for its ability to reduce psychological stress in different populations<sup>3,14</sup>. According to studies conducted on higher education students and faculty, there is an inverse relationship between trait mindfulness and stress levels. More mindful individuals have lower stress levels<sup>14</sup>.

All PT faculty experience similar accreditation stressors. However, faculty academic workload differs depending on which higher education institution they teach at: university versus community college/technical school. University-level DPT faculty typically have research productivity requirements, more supporting faculty, and fewer teaching responsibilities. On the other hand, PTA faculty who primarily teach at community colleges/technical schools have more teaching responsibilities with fewer supporting faculty and fewer research productivity requirements<sup>6,12</sup>. The perceived stress and trait mindfulness levels of all full-time PT faculty remain unknown, and whether there are differences in perceived stress levels between full-time DPT and full-time PTA faculty is also unknown. A gap in the literature was found regarding the effect of trait mindfulness levels on all full-time PT faculty's perceived stress levels. Determining the statistical relationship between perceived stress and trait mindfulness levels among all full-time PT faculty may

fill the literature gap.

### Problem

The problem was that it was unknown if any relationship existed between perceived stress and trait mindfulness levels among all full-time PT faculty as well as between perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty. Work-related stress is common among higher education faculty and those in healthcare professions, but research on this population is limited<sup>1</sup>. The COVID-19 pandemic and the resulting unanticipated college and university closures forced faculty in healthcare professions to transition from traditional F2F lecture, laboratory, and clinical education experiences to a fully online learning environment<sup>16</sup>.

Emergency remote teaching forced about by the COVID-19 pandemic negatively affected faculty in healthcare professions, including PT. However, the relationship between trait mindfulness and perceived stress levels among all PT faculty was unknown<sup>16</sup>. Studies among various populations support the efficacy of coping mechanisms, such as mindfulness, to offset the negative consequences of stress<sup>3</sup>. Furthermore, studies have yet to explore how trait mindfulness levels among faculty in healthcare professions, such as PT, affect stress levels. There is also a gap in the literature concerning how stressed all full-time PT faculty are, whether inherent coping mechanisms may offset stress levels, and whether stress and trait mindfulness levels differ between full-time DPT and full-time PTA faculty. Full-time DPT and full-time PTA faculty have different work responsibilities, but whether these differences influence their perceived stress and trait mindfulness levels is still unknown.

### Purpose

The purpose of this quantitative, non-experimental study was to determine the statistical relationship between perceived stress and trait mindfulness levels among all full-time PT faculty. A secondary purpose of this study was to determine the statistical relationship between perceived stress and trait mindfulness levels among full-time DPT faculty and full-time PTA faculty.

Because of growing work demands, higher education faculty experience increased work-related stress. The COVID-19 pandemic and the adoption of emergency remote teaching exacerbated their work-related stress<sup>17</sup>. Like all faculty, faculty in healthcare professions reformatted traditional F2F lecture courses into online learning. But faculty in healthcare professions had the additional challenge of altering laboratory courses and reconfiguring clinical education experiences<sup>17</sup>. This study focused on full-time DPT and full-time PTA faculty, and its findings could add to the existing research on the topic by determining the correlation between perceived stress and trait mindfulness levels in this specific population<sup>17,18</sup>. An electronic survey was distributed through the American Physical Therapy Association (APTA) Academy of Education listserv. The APTA Academy of Education is comprised of DPT and PTA faculty across the United States. The survey included participant demographic information, the Perceived Stress Scale (PSS), the Mindfulness Attention and Awareness Scale (MAAS), and the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). All full-time DPT and full-time PTA faculty who completed all survey questions had their responses analyzed. According to G\*Power analysis, the minimum sample size is 84 responses based on a 95% confidence interval and a power of 0.80. Data analysis determined the statistical relationship between variables by calculating Pearson's correlation coefficient<sup>18</sup>. An independent samples t-test was used to determine the relationship between the variables of full-time DPT faculty

compared to full-time PTA faculty.

The purpose of this quantitative, non-experimental study was to determine the statistical relationship between perceived stress and trait mindfulness levels among all full-time PT faculty. A secondary purpose of this study was to determine the statistical relationship between perceived stress and trait mindfulness levels among full-time DPT faculty and full-time PTA faculty.

This study answered the following research questions:

**RQ 1:** What is the statistical relationship between perceived stress and trait mindfulness levels among all full-time PT faculty?

**RQ 2:** Is there a statistically significant difference in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty?

**SUBRQ1:** Is there a statistically significant difference in perceived stress and trait mindfulness levels as assessed by the MAAS and the CAMS-R among all full-time PT faculty?

The following hypotheses were tested:

**H1:** A statistically significant relationship exists between perceived stress and trait mindfulness levels among all full-time PT faculty.

**H2:** A statistically significant difference exists between perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty.

**H3:** A statistically significant difference exists between perceived stress and trait mindfulness levels assessed by the MAAS and the CAMS-R among all full-time PT faculty.

### Participants and Sampling

A total of 137 faculty members took the survey. However, only 123 participants completed all survey questions. Thus, 14 participants were excluded from data analysis because they did not answer all survey questions. The participants' demographic characteristics are presented in Table 1.

Characteristic		<i>n</i>	%
Gender	Male	29	23.6%
	Female	94	76.5%
Age	25 to 34	2	1.6%
	35 to 44	28	22.8%
	45 to 54	44	35.8%
	55 to 64	42	34.1%
	65 and above	7	5.7%
Program taught	DPT	79	64.2%
	PTA	44	35.8%
Number of teaching years as a full-time faculty member	0 to 5 years	14	11.4%
	6 to 10 years	36	29.3%
	11 to 15 years	29	23.6%
	16 to 20 years	16	13%
	20 years and above	1	0.8%
Highest education degree attained	Bachelor's degree	7	5.7%
	Master's degree	15	12.2%
	Clinical doctorate (DPT)	39	31.7%
	Academic doctorate (PhD, EdD)	61	49.6%

Note. *N* = 123.

**Table: 1**  
**Demographic Characteristics of Participants**

The majority of the surveyed faculty were female (76.5%, *n* = 94). Most participants were aged between 45 and 54 years (35.8%, *n* = 44) and 45 to 54 (*n* = 42), while only a small percentage were aged above 65 (5.7%, *n* = 7) or below 35 (1.6%, *n* = 2) years. The majority of the surveyed faculty taught in a DPT program (64.2%, *n* = 79). Many of the participants worked full-time as faculty members for 6 to 10 (29.3%, *n* = 36) and 11 to 15 (23.6%, *n* = 29) years, comprising over half of the surveyed faculty. Regarding their educational backgrounds, almost half of the participants attained an academic doctorate, such as a PhD (49.6%, *n* = 61), while about a third had clinical doctorates, such as a DPT (31.7%, *n* = 39) as their highest degree.

### Data Collection

The data was collected using three psychometric tools: the Perceived Stress Scale (PSS), the Mindfulness Attention and Awareness Scale (MAAS), and the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). The participants' demographic characteristics were also measured to include information relevant to the study. Data preparation included coding the data into a Microsoft Excel document for each scale, question, and participant. Each participant's response was inputted into each question on all the scales in the Microsoft Excel document, where a row represented each participant. The specific items or questions formed the columns, and the responses were inputted as numbers for all the categorical and nominal questions.

The second stage of data preparation included data cleaning. Data cleaning involved reviewing the entered data to ensure it was error-free. Each entry was compared against the completed questionnaire to ensure accuracy by checking for and correcting data entry errors. Microsoft Excel was also used to ensure that the data fits within the parameters of the Likert scale for each question. Further cleaning involved separating the categorical questions into responses so each answer had binary, yes or no, data.

The data was then transferred to SPSS 26 for descriptive and inferential analysis. For descriptive analysis, tables and charts were created to describe the data. The assumptions for each inferential test were conducted using SPSS, followed by the calculation of the actual correlation and tests for independence. The tables developed were then transferred to Microsoft Excel for further analysis and chart development.

## RESULTS

### Research Question 1

The first research question asked what is the statistical relationship between perceived stress and trait mindfulness levels among all full-time PT faculty.

**H0:** No statistically significant relationship exists between perceived stress and trait mindfulness levels among all full-time PT faculty.

**HA:** A statistically significant relationship exists between perceived stress and trait mindfulness levels among all full-time PT faculty.

The existence of a relationship between the two variables, perceived stress and trait mindfulness, was measured using a Pearson's product moment correlation test. Pearson's correlation calculates whether there is a statistically significant association between two continuous variables. The assumptions of a Pearson's correlation test are that the two variables are measured



at a ratio or interval level, be normally distributed, have a linear relationship, and have no significant outliers. All the assumptions were met, and a linear relationship between the variables as well as the normal distribution were indicated by a scatter plot and a histogram with a normal curve, respectively. The findings of the test are presented in Table 2.

		PSS	MAAS	CAMS - R
Perceived Stress Scale (PSS)	R	1		
	Sig. (2-tailed)			
Mindfulness Attention Awareness Scale (MAAS)	R	-.594**	1	
	Sig. (2-tailed)	.000		
Cognitive and Affective Mindfulness (CAMS-R)	R	-.666**	.715**	1
	Sig. (2-tailed)	.000	.000	

Note. \*\* Correlation is significant at the 0.01 level (2-tailed).

Table 2

#### Pearson's Correlation Results: Perceived Stress and Trait Mindfulness Levels

The findings indicate a statistically significant association between perceived stress and trait mindfulness levels measured using the MAAS ( $r = -0.59, p < 0.001$ ) and CAMS-R ( $r = -0.67, p < 0.001$ ). The correlation coefficient  $r$  indicates a moderately strong negative association between perceived stress and trait mindfulness levels. With these findings, the null hypothesis is rejected, and conclusions are drawn that a statistically significant relationship exists between perceived stress and trait mindfulness levels among all full-time PT faculty. Faculty who reported higher perceived stress levels also reported lower trait mindfulness levels, whereas faculty who reported lower perceived stress levels tended to have higher trait mindfulness levels.

#### Research Question 2

The second research question asked if a statistical difference exists in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty.

H0: No statistically significant difference exists in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty.

HA: A statistically significant difference exists in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty.

An independent sample t-test was used to measure the independence of the samples. The independent sample t-test compares the means of two independent samples to determine the difference between the means of the variables studied. The assumptions of the test include the measurement of the variables, where the dependent variable is continuous, and the independent variable is categorical. This was met because all participants were either DPT or PTA faculty, while trait mindfulness and perceived stress levels were measured using a continuous scale. The observation should also be independent, which was tenable for the data. The assumptions of normality and lack of significant

outliers were met, as indicated in the previous hypothesis. The final assumption is the homogeneity of variances, which was tested using Levene's test for homogeneity of variances. Levene's test for homogeneity indicated that each of the two variances for the PSS ( $F = 0.25, p = 0.618$ ), the MAAS ( $F = 0.86, p = 0.357$ ), and the CAMS-R ( $F = 0.54, p = 0.465$ ) were homogeneous. The test results are indicated in Table 3.

	Progr am	Me an	Std. Deviat ion	Me an Diff	F	T	df	sig
PSS	DPT	15.77	6.87	-1.55	.250	-1.210	121	.229
	PTA	17.32	6.66					
MAAS	DPT	58.85	11.67	2.30	.856	.991	121	.324
	PTA	56.55	13.50					
CAMS-R	DPT	34.30	5.84	1.89	.536	1.64	121	.104
	PTA	32.41	6.69					

Table 3

#### Independent samples T-test Results: Research Question 2

Based on the results, there were no significant differences in PSS ( $t = 1.21, p = 0.229$ ), MAAS ( $t = 0.99, p = 0.324$ ), and CAMS-R ( $t = 0.99, p = 0.104$ ) levels between full-time DPT faculty compared to full-time PTA faculty. Therefore, the null hypothesis that there is no statistically significant difference in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty members is accepted.

#### Sub-Research Question 1

The sub-research question asked if a statistically significant difference exists in perceived stress and trait mindfulness levels as assessed by the MAAS and the CAMS-R among all full-time PT faculty.

H0: No statistically significant difference exists in perceived stress and trait mindfulness levels assessed by the MAAS and the CAMS-R among all full-time PT faculty.

HA: A statistically significant difference exists in perceived stress and trait mindfulness levels assessed by the MAAS and the CAMS-R among full-time PT faculty.

An independent samples t-test was used to measure the differences in the two observations. The assumptions of normality, independence of observations, and measurement levels were met as indicated in the previous hypotheses. However, it is important to note that the two scales use different Likert points in their measurements. The MAAS uses a five-point Likert scale while the CAMS-R uses a four-point Likert scale. Additionally, the two scales have varying number of questions where the MAAS has 15 items, and the CAMS-R has 12 items. To mitigate against the bias caused by the different number of questions on each scale, the averages were used instead of the sum used in the previous hypotheses. The results are indicated in Table 4.

Table 4

#### Independent samples T-test Results: Sub-Research Question 1

The findings indicate a statistically significant difference in perceived stress and trait mindfulness levels assessed by the MAAS and the CAMS-R ( $t = 7.47, p < 0.001$ ). Given the statistically significant difference, the null hypothesis is rejected. There is a statistically significant difference in the trait mindfulness measures assessed by the MAAS and the CAMS-R.

## DISCUSSION

### Research Question 1

According to the results, there is a statistically significant inverse relationship between trait mindfulness levels and perceived stress among all full-time PT faculty. The relationship between the variables was found to be moderately strong and negative; as one variable increases, the other variable decreases. For example, as perceived stress levels increased, trait mindfulness levels decreased. These results are consistent with prior research showing that trait mindfulness may modulate perceived stress levels. Mindfulness helps improve stress levels and decreases the rate of psychological and physical conditions<sup>19</sup>. A study by Willgens et al.<sup>20</sup> showed that mindfulness training helps reduce psychological distress, regulates emotions, and allows for transparent decision-making. In the classroom, mindfulness allows faculty to manage personal stress, display appropriate behavior control in stressful situations, facilitate a calm, supportive learning environment, and improve self-efficacy and resilience. Mindfulness, a positive coping strategy, promotes emotion regulation. Reduced stress levels and enhanced coping mechanisms improve teacher-student interactions, improving student learning. A study by Diego-Medrano and Ramos Salazar<sup>21</sup> found that faculty struggling to balance professional responsibilities and everyday life often have increased stress levels and burnout. The ability to recognize stress led to faculty feeling a sense of self-regulation, which resulted in more positive student-teacher relationships<sup>22</sup>. Additionally, as reported in prior research, adopting emergency remote teaching during the COVID-19 pandemic exacerbated faculty stress levels. Faculty in healthcare professions were particularly challenged to restructure laboratory courses and clinical education experiences. These findings support the idea that this teaching disruption heightened faculty stress levels.

### Research Question 2

The study's results indicated there is no statistically significant difference in the perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty. The null hypothesis stated that no statistically significant difference exists in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty. According to a study by Berry and Hosford<sup>23</sup>, PTA faculty based in community colleges have more teaching responsibilities than DPT faculty who teach at universities. The teaching time for PTA program directors often equates to over 70%, leaving limited time for non-classroom responsibilities and contributing to high stress levels. However, despite the fewer teaching hours of full-time DPT faculty, they are often burdened by research obligations and university demands. These results support the fact that, despite differing workloads, all full-time PT faculty encounter similar stress.

### Sub-Research Question 1

Based on the independent samples t-test, there is a statistically significant difference in perceived stress and trait mindfulness levels assessed by the MAAS and the CAMS-R among all full-time PT faculty. The null hypothesis stated that no statistically significant difference exists in perceived stress and trait mindfulness levels measured by the MAAS and the CAMS-R.

The findings indicate a statistically significant difference based on weighted averages for each scale. Therefore, the null hypothesis is rejected. No research studies have been done to support this hypothesis; prior research studies only concentrated on the difference between perceived stress and trait mindfulness levels.

### Recommendations for Future Practice:

This is an early study that specifically focused on the relationship between perceived stress and trait mindfulness levels of faculty in healthcare professions. Stress is rising among higher education faculty and, if not managed, decreases health and well-being. The COVID-19 pandemic greatly challenged faculty in healthcare professions like physical therapy (PT). Despite increasing stress levels, PT faculty stress levels are often ignored. One way to decrease stress levels is through the emotion-focused coping technique of mindfulness. The purpose of this quantitative, non-experimental study was to determine the statistical relationship between perceived stress and trait mindfulness levels among all full-time PT faculty. A secondary purpose of this study was to determine the statistical relationship between perceived stress and trait mindfulness levels among full-time DPT faculty and full-time PTA faculty.

A quantitative design was appropriate for this research study since data was collected by measuring quantities (numerical data). The survey design included participant demographic questions and three standardized scales: the Perceived Stress Scale (PSS), the Mindfulness Attention and Awareness Scale (MAAS), and the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). All three scales have been found to be reliable and valid. The three questionnaires generated quantitative data using Likert rating scales and ordinal measurements. To address the study's primary purpose, data analysis calculating Pearson's correlation coefficient from 123 survey participants who met the inclusion criteria revealed a statistically significant negative relationship between perceived stress and trait mindfulness levels among all full-time PT faculty. Additionally, to address the study's secondary purpose, results of an independent samples t-test showed no statistically significant difference in perceived stress and trait mindfulness levels of full-time DPT faculty compared to full-time PTA faculty. Lastly, this study found a statistically significant difference in perceived stress and trait mindfulness levels assessed by the MAAS and the CAMS-R.

This study has several limitations. This study was limited to full-time DPT and full-time PTA faculty in the United States, thus limiting the generalizability of the results to part-time or adjunct faculty and PT faculty in other countries. The results cannot be generalized to faculty in other healthcare professions since only PT faculty were surveyed. Another limitation of this study is that the number of questions and Likert scale range differed for the three standardized scales. The varying number of questions and Likert scale range limited the ability to compare participant averages. A further limitation is that all survey questions were closed-ended, not allowing participants to make comments or explain their answer choices. The lack of open-ended questions limits a deeper understanding of the results.

While high stress is prevalent among faculty in higher education, the specific causes of stress were not investigated. Demographic questions did not include whether faculty had prior online teaching experience. Therefore, it is unknown if adopting emergency remote teaching caused faculty-reported stress levels or if the levels resulted from daily life stressors. Additionally, this study did not delineate if any faculty already practice

mindfulness techniques as a coping mechanism to manage stress levels. Lastly, this study was completed in early 2023, toward the end of the United States's public health emergency for the COVID-19 pandemic<sup>10</sup>. During this late phase of the public health emergency, all full-time PT faculty were likely managing programmatic changes differently and were likely more accustomed to a new normal of teaching methods. Therefore, the COVID-19 teaching changes may not have directly influenced faculty's perceived stress levels.

Faculty in healthcare professions, specifically PT education, encounter significant stress. The COVID-19 pandemic forced PT faculty to adopt emergency remote teaching. The rapid transformation of learning environments and the adoption and implementation of advanced technology contributed to higher PT faculty stress levels. A negative correlation between the variables was found among all full-time PT faculty; those with lower perceived stress levels had higher trait mindfulness levels. Both groups, full-time DPT faculty and full-time PTA faculty, perceived high stress levels, and no difference was noted between the two groups. The negative correlation between perceived stress and trait mindfulness levels suggests that mindfulness interventions may be useful to offset faculty's perceived stress levels. Furthermore, despite differing workloads, work responsibilities, and challenges of emergency remote teaching, full-time DPT faculty and full-time PTA faculty did not significantly differ in their perceived stress and trait mindfulness levels. Since prolonged stress harms work performance and eventually results in poor health, addressing its increasing levels among faculty in healthcare professions is necessary. Professional development and training should incorporate techniques like mindfulness to minimize faculty stress levels and support their overall health and well-being.

## REFERENCES

- Roos, B. H., & Borkoski, C. C. (2021). Attending to the teacher in the teaching: Prioritizing faculty well-being. *Perspectives of the ASHA Special Interest Groups*, 6(4), 831–840. [https://doi.org/10.1044/2021\\_persp-21-00006](https://doi.org/10.1044/2021_persp-21-00006)
- Montero-Marin, J., Taylor, L., Crane, C., Greenberg, M. T., Ford, T. J., Williams, J. M. G., Garcia-Campayo, J., Sonley, A., Lord, L., Dalglish, T., Blakemore, S.-J., MYRIAD team, & Kuyken, W. (2021). Teachers "finding peace in a frantic world": An experimental study of self-taught and instructor-led mindfulness program formats on acceptability, effectiveness, and mechanisms. *Journal of Educational Psychology*, 113(8), 1689–1708. <https://doi.org/10.1037/edu0000542>
- Kennedy, D. P., Haley, A., & Evans, R. (2022). Design of a mindfulness-based intervention to support teachers' emotional regulation behaviors. *Current Psychology*, 42, 15674–15687. <https://doi.org/10.1007/s12144-022-02696-w>
- Hyatt, K. (2022). Stressors in higher education that lead to burnout and solutions to avoid it. *Journal of Business and Educational Leadership*, 12(1), 110–125. [http://asbbs.org/files/2021-22/JBEL\\_Vol\\_12.1\\_Summer\\_2022.pdf#page=110](http://asbbs.org/files/2021-22/JBEL_Vol_12.1_Summer_2022.pdf#page=110)
- Gagnon, K., Young, B., Bachman, T., Longbottom, T., Severin, R., & Walker, M. J. (2020). Doctor of physical therapy education in a hybrid learning environment: Reimagining the possibilities and navigating a "new normal." *Physical Therapy*, 100(8), 1268–1277. <https://doi.org/10.1093/ptj/pzaa096>
- Mosleh, S. M., Kasasbeha, M. A., Aljawarneh, Y. M., Alrimawi, I., & Saifan, A. R. (2022). The impact of online teaching on stress and burnout of academics during the transition to remote teaching from home. *BMC Medical Education*, 22, Article 475. <https://doi.org/10.1186/s12909-022-03496-3>
- Kotini-Shah, P., Man, B., Pabee, R., Hirshfield, L. E., Risman, B. J., Buhimschi, I. A., & Weinreich, H. M. (2021). Work-life balance and productivity among academic faculty during the COVID-19 pandemic: A latent class analysis. *Journal of Women's Health*, 31(3), 321–300. <https://doi.org/10.1089/jwh.2021.0277>
- Plummer, L., Belgen Kaygisiz, B., Pessoa Kuehner, C., Gore, S., Mercurio, R., Chatiwala, N., & Naidoo, K. (2021). Teaching online during the COVID-19 pandemic: A phenomenological study of physical therapist faculty in Brazil, Cyprus, and the United States. *Education Sciences*, 11, Article 130. <https://files.eric.ed.gov/fulltext/EJ1290287.pdf>
- Choate, J., Aguilar-Roca, N., Beckett, E., Etherington, S., French, M., Gaganis, V., Haigh, C., Scott, D., Sweeney, T., & Zubek, J. (2021). International educators' attitudes, experiences, and recommendations after an abrupt transition to remote physiology laboratories. *Advances in Physiology Education*, 45(2), 310–321. <https://doi.org/10.1152/advan.00241.2020>
- Colclasure, B. C., Marlier, A., Durham, M. F., Brooks, T. D., & Kerr, M. (2021). Identified challenges from faculty teaching at predominantly undergraduate institutions after abrupt transition to emergency remote teaching during the COVID-19 pandemic. *Education Sciences*, 11(9), Article 556. <https://doi.org/10.3390/educsci11090556>
- Commission on Accreditation in Physical Therapy Education. (2020a, November 3). Standards and required elements for accreditation of physical therapist assistant education programs. <https://www.capteonline.org/globalassets/capte-docs/capte-pta-standards-required-elements.pdf>
- Commission on Accreditation in Physical Therapy Education. (2020b, November 3). Standards and required elements for accreditation of physical therapist education programs. <https://www.capteonline.org/globalassets/capte-docs/capte-pt-standards-required-elements.pdf>
- Majsak, M. J., Hall, C. A., Kirsch, N. R., Krencicki, D. B., Locke, E., & Hyland, N. (2022). Physical therapy education program faculty challenges, concerns, and priorities during the COVID-19 pandemic: Looking back and moving forward. *Journal of Physical Therapy Education*, 36(2), 97–106. <https://doi.org/10.1097/jte.0000000000000228>
- Bi, Y., & Ye, X. (2021). The effect of trait mindfulness on teachers' emotional exhaustion: The chain mediating role of psychological capital and job engagement. *Healthcare*, 9(11), Article 1527. <https://doi.org/10.3390/healthcare9111527>
- Shen, P., & Slater, P. (2021). The effect of occupational stress and coping strategies on mental health and emotional well-being among university academic staff during the COVID-19 outbreak. *International Education Studies*, 14(3), 82–95. <https://doi.org/10.5539/ies.v14n3p82>
- Howe, D. L., Heitner, K. L., Dozier, A., & Silas, S. (2021). Health professions faculty experiences teaching online during the COVID-19 pandemic. *The ABNF Journal*, 32(1), 6–11.
- Davis, A., LaPorta, L., Mulligan, N., Carmel, S., Thomas, S., & O'Dell, D. (2022). Quality delivered: How a pandemic fostered innovation and creative solutions in clinical education. *Internet Journal of Allied Health Sciences and Practice*, 20(3), Article 18. <https://nsuworks.nova.edu/ijahsp/vol20/iss3/18/>
- Mukaka, M. (2012). Statistics corner: A guide to appropriate use of correlation coefficient in medical research. *Malawi Medical Journal: The Journal of Medical Association of Malawi*, 24(3), 6–9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3576830/>
- Daya, Z., & Hearn, J. H. (2017). Mindfulness interventions in medical education: A systematic review of their impact on medical student stress, depression, fatigue and burnout. *Medical Teacher*, 40(2), 146–153. <https://doi.org/10.1080/0142159x.2017.1394999>
- Willgens, A. M., Craig, S., DeLuca, M., DeSanto, C., Forenza, A., Kenton, T., Previte, E., Woytovich, C., & Yakimec, G. (2016). Physical therapists' perceptions of mindfulness for stress reduction: An exploratory study. *Journal of Physical Therapy Education*, 30(2), 45–51. <https://doi.org/10.1097/00001416-20160020-00009>
- Diego-Medrano, E., & Ramos Salazar, L. (2021). Examining work-life balance of faculty in higher education. *International Journal of Social Policy and Education*, 3(3), 27–36. [https://www.academia.edu/46923563/Examining\\_Work\\_Life\\_Balance\\_of\\_Faculty\\_in\\_Higher\\_Education](https://www.academia.edu/46923563/Examining_Work_Life_Balance_of_Faculty_in_Higher_Education)
- Kiltz, L., Rinas, R., Daumiller, M., Fokkens-Bruinsma, M., & Jansen, E. P. W. A. (2020). "When they struggle, I cannot sleep well either": Perceptions and interactions surrounding university student and teacher well-being. *Frontiers in Psychology*, 11, Article 578378. <https://doi.org/10.3389/fpsyg.2020.578378>

23. Berry, J. W., & Hosford, C. C. (2014). Burnout among physical therapist assistant program directors: A nationwide survey and analysis. *Journal of Allied Health*, 43(2), 72–78.